

**CLAIMS**

What is claimed is:

1. A brake rotor, comprising:  
an annular disc connected to an annular mounting flange;  
a radially inner flange wall defined by the mounting flange, the inner flange wall having a plurality of circumferentially spaced mounting holes;  
a plurality of recesses in the inner flange wall, each recess being disposed circumferentially between adjacent mounting holes;  
a plurality of ventilation vanes between opposing braking faces of the annular disc, wherein at least one ventilation vane includes an inner vane portion extending inwardly of a radially inner edge of the annular disc.
2. A brake rotor as defined in claim 1, wherein the inner vane portion projects from the mounting flange.
3. A brake rotor as defined in claim 1, wherein the inner vane portions are substantially radially in line with the recess.
4. A brake rotor as defined in claim 1, wherein the radially inner edges of said inner vane portions define a circle having a diameter.
5. A brake rotor as defined in claim 4, wherein the grooves have radially outer edges defining a groove radially outer edge circle having a diameter that is less than the diameter of the circle defined by the radially inner edges of the inner vane portions.
6. A brake rotor as defined in claim 4, wherein the mounting holes define a mounting hole pitch circle diameter that is substantially the same as the diameter of the circle defined by the radially inner edges of said inner vane portions.

7. A brake rotor as defined in claim 4, wherein the mounting holes have radially inner edges defining a mounting hole radially inner edge circle having a diameter that is less than the diameter of the circle defined by the radially inner edges of said inner vane portions.

8. A brake rotor as defined in claim 1, wherein each of said plurality of recesses is in the form of an axially oriented groove.

9. A brake rotor as defined in claim 8, wherein each axially oriented groove has a substantially semicircular radially outermost end, with each end having a center, the centers defining a groove end center pitch circle diameter.

10. A brake rotor as defined in claim 9, wherein the groove end center pitch circle diameter is less than the diameter of the circle defined by the radially inner edges of said inner vane portions.

11. A brake rotor as defined in claim 1, wherein the annular disc is axially offset relative to the annular mounting flange.

12. A brake rotor as defined in claim 11, wherein the annular disc axially overlaps the annular mounting flange.